

## **HIGHWAY PERFORMANCE MONITORING SYSTEM**

**State of California**  
**Department of Transportation**  
Division of Transportation System Information

### **HPMS Update Instructions**

- Linear Reference System (LRS)
- Section Length
- Annual Average Daily Traffic (AADT)
- Measured Pavement Roughness (IRI or PCI)
- Surface Type
- Rutting
- Faulting

## **HPMS Update Instructions**

- Faulting
- Cracking
- Year Last Construction
- Last Overlay Thickness
- Year of Surface Improvement
- Speed Limit
- % Single Unit Trucks in Peak Period  
(Classes 4 to 7 Up to 3 axles, attached trailer)

## **HPMS Update Instructions**

- % Single Unit Trucks in Average Daily Traffic
- % Combination Trucks in Peak Periods  
(Classes 8 to 13, 4 or more axles, 1 to 2 Trailers)
- % Combination Trucks in Average Daily Traffic

## HPMS Update Instructions

- K Factor (Design Hour Volume)
- Directional Factor (D Factor)
- See Handouts for K and D Factors
- Future AADT
- Year of Future AADT

### Some of the major purposes:

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- ▣ Biennial reports to Congress on the state of the nation's highways
- ▣ A basis for funding allocation to the states
- ▣ VMT for air quality conformity tracking in carbon monoxide and ozone nonattainment areas
- ▣ Planning data to Caltrans, the Regions, and other agencies
- ▣ Input to the California Public Road Data

## State Highway Traffic Data

### Traffic and Vehicle Data Systems Unit

<http://www.dot.ca.gov/hq/traffops/saferesr/trafdata/index.htm>

Caltrans traffic counts are summarized annually into three reports:

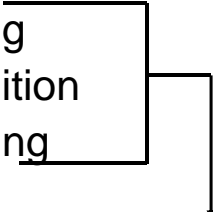
- Traffic Volumes
- Annual Average Daily Truck Traffic
- Ramp Volumes

These may be downloaded from this site (PDF or Excel Files).

## Information sought

- Roadway Inventory  
**All Public Streets and Roads**

- Traffic Monitoring
- Pavement Condition
- Travel Forecasting



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**All principal arterials and a sampling of the minor arterials and collectors.**

## Roadway Inventory

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This is captured in the annual maintained mileage report

- ☐ Section lengths with number of lanes are reported
  - ☐ Function Class and CRS map numbers are added for reference
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## A Public Road

- A public road is any road or street owned and maintained by a public authority and open to public travel. [23 U.S.C. 101(a)].
- ... must be ... passable by four-wheel standard passenger cars, and open to the general public for use without restrictive gates, prohibitive signs, or regulation ... [23 CFR 460.2(c)]

## Traffic Monitoring

Included therein are:















- AADT
- K factor
- D factor
- Truck percentages

The State uses a model to estimate VMT on the non-federal aid routes

Data Collection Guide for SPS WDM Sites  
Version 1.0

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**Figure C-1 – FHWA Vehicle Classification Scheme**

Class	Illustration	Description
1		Motorcycles
2		Passenger Cars
3		Pickups/Vans
4		Buses
5		6 tire two-axle single unit trucks
6		Three axle single unit trucks
7		Four or more axle single unit trucks
8		Four or fewer axle truck and trailer combinations
9		Five axle truck and trailer combinations
10		Six or more axle truck and trailer combinations
11		Five or fewer axle multis
12		Six axle multis
13		Seven or more axle multis
		Errors/Unknown

Passenger Vehicles

Single-Unit Trucks

Combination-Unit Trucks

These are negligible

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## Travel Forecasting

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- Future AADT
- Year of Future AADT  
18 to 25 years hence, or your model year

Questions and Answers

## The new data model

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- Facilitates dynamic segmentation
- Bifurcation of functional classification is eliminated

## The new data model changes how sections are indexed

- County code and section ID goes away
- Example                      from                      to  
    WILSHIRE BLVD      FIGUEROA AVE      GRAND AVE  
    County Code = 037    Section ID = 07L188160000
- Would now be indexed by a Linear Referencing System

LRS ID = 000000L18801    Begin LRS = 15.538    End LRS = 15.768



Functional Classification Conversion Table		
Old FC Code		New FC Code
1, 11	 Interstate	1
12	 Other Freeways and Expressways	2
2, 14	 Other Principal Arterial	3
6, 16	 Minor Arterial	4
7, 17	 Major Collector	5
8	 Minor Collector	6
9, 19	 Local	7

## For more information

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This presentation is available at the HPMS web site:

<http://www.dot.ca.gov/hq/tsip/hpms/index.php>

